

INDUSTRIAL TRENDS IN THE TENNESSEE VALLEY*

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INTRODUCTION

THE extent and nature of industrialization in the South has been an important subject for public discussion for more than a century. Henry Grady was one of the first southern statesmen to put the problem clearly before the public. Since that time the economic problems of the South have been widely discussed, especially so since the first World War. As time passes more and more people are recognizing the true elements of this phase of the social problem and are earnestly trying to do something about it. Yet, as late as 1938, the South was referred to as America's No. 1 economic problem.¹ Recently, however, southern leaders have sounded a more optimistic note and have called attention to the South as a region of economic opportunity.² Public discussion of this sort invariably results in action—sometimes slowly and sometimes rapidly, depending partly upon the clarity with which the issues are presented to the people. Interest

in this particular issue, the industrialization of the South, has already brought about some changes that can be measured.

The purpose of this discussion is to measure the rate at which industry has been developing in a particular subregion of the Southeast. The industrial trends in the subregion will be analyzed and compared with the trends in seven southeastern states and in the nation. The counties that lie within the watershed of the Tennessee River have been chosen as the subregion. This particular subregion was chosen for several reasons. The first and most important reason was that the principal streams draining the watershed have been recently brought under control in a manner that makes power and navigation available simultaneously with a reasonable control over destructive floods. Second, the choice is justified because problems inherent in the development of a watershed are often more uniform and closely interrelated than are problems in areas defined on more arbitrary bases. Finally, the area is predominantly rural, with half of the people living on the land. The land has been badly eroding, and at present it is greatly in need of mineral plant nutrients. This condition has contributed substantially to the relatively low average income of the people, particularly the farmers.

The seven southeastern States for which comparative data are given are Virginia, North Caro-

* This paper is part of a larger study of economic trends in the Tennessee Valley.

¹ Report on Economic Conditions of the South, prepared for the President by the National Emergency Council.

² See David E. Lilienthal, *TVA—Democracy On the March* (New York, 1944); and Ellis Arnall, "The Unknown South: Our Last Frontier," *New York Times*, July 15, 1945.

lina, Georgia, Kentucky, Tennessee, Alabama, and Mississippi. Parts of each of these States lie within the Tennessee Valley. Collectively they are typical of the "Old South" or the "Cotton South." In many respects this group of states forms a more homogeneous economic unit than the group of States usually referred to as "the South."

The Tennessee Valley includes all or part of 122 counties located in seven southeastern States. The counties have a total area of some 56,000 square miles (approximately the area of Illinois) and were inhabited by some 3,225,000 people in 1940. Thus the average population density was 63 persons per square mile, almost 50 percent greater than the density of 44 persons per square mile in the United States. There is a great variation in the density of the Valley population, however. In the more rugged and less fertile mountainous areas the density was as low as 20 people per square mile. One-fourth of the people lived in urban places of 2,500 or over, and the remaining rural three-fourths were in villages, the open country, or on farms. Approximately one-half of all the people lived on farms, while one out of eleven lived in the three metropolitan centers of Chattanooga, Knoxville, and Asheville.

The population of seven Tennessee Valley States was over twenty million in 1940, or one-sixth of the nation's total. Less than one-third (30.6 percent) of the population lived in cities and almost one-half (46.1 percent) lived on farms. Between 1930 and 1940 the total population of the seven States increased 9.8 percent, while the farm population increased only 2.6 percent. This increase occurred in spite of the fact that between 1935 and 1940 there was a large net migration, amounting to about 3 percent of the population from six of the States. (There was a net migration into Virginia.) During the five years 958,000 persons left the seven States and only 758,000 came in, leaving a net loss of 200,000 or 1.0 percent of the population in 1935.

The population of the Valley counties has also grown at a comparatively high rate. In spite of a heavy intercounty and interstate migration between 1930 and 1940 the total population of the Valley increased 11.9 percent as compared to an increase of 7.2 percent in the nation as a whole. There is also evidence of a comparatively more rapid urbanization in the Valley during the decade. The urban population increased 15.1 percent, almost twice the rate for the United States, while

the rural population increased 10.9 percent. A more significant fact, however, is that the farm population increased only 6.1 percent while the total nonfarm population increased 18.7 percent.

These changes were accompanied by a substantial increase in the number of persons employed in non-agricultural pursuits and a corresponding decline in agricultural employment. In 1940 the proportion of the population engaged in non-agricultural pursuits was 8 percent higher than in 1930, while the proportion of those employed directly in agriculture was 8 percent lower. This has stimulated considerable speculation as to what has been the trend of industrial activity in the area and what effect this has had on the regional economy. The data presented in the following paragraphs indicate these trends as measured by several criteria.

THE NUMBER AND TYPE OF MANUFACTURING PLANTS

Changes in the number and type of industrial plants are roughly indicative of the trend of industrial activity. In 1939 there were 2,069 plants reported operating in the Valley. This was 721 more than were reported in 1933, an increase of 54 percent. Meanwhile, the number of plants in the United States as a whole had increased only 30 percent over the number reported in 1933.

The increase in industrial plants in the Valley during the period 1933-39 was due in large part to the expansion of established industries in chemicals, textiles, light metals, and others. Among these were over one hundred new enterprises engaged in manufacturing rayon, hosiery, garments, shoes, wood products, phosphorus, and other lines. These new plants have partly offset the heavy decline in the number of plants between 1929 and 1933. More than three-fourths of the plants located in the Valley in 1939 were classified in six of the twenty major types of industry, namely in order of importance: food and kindred products, 600 plants; lumber and timber products, 414 plants; printing, 211 plants; textiles, 182 plants; stone, clay, and glass products, 120 plants; and furniture, 107 plants. In addition there were 99 plants manufacturing apparel and finished textile products, 90 manufacturing iron, steel, and nonferrous metals, and 79 manufacturing chemical and allied products. As the number of plants has increased, the products of the factories in the region have become more diversified, but more

than half of the plants in the Valley still process food and lumber products.

TABLE 1
NUMBER OF MANUFACTURING ESTABLISHMENTS,
1929-39

	NUMBER OF PLANTS			PERCENT CHANGE	
	1929	1933	1939	1933-39	1929-39
122 TV					
Counties...	3,017	1,348	2,069	53.5	-31.4
7 TV States...	20,957	11,110	16,229	46.1	-22.6
United States	209,862	141,769	184,230	30.0	-12.2

Source: *Census of Manufactures*, 1929, 1933 and 1939. County totals in this and following tables include unpublished census data withheld to avoid disclosure of individual concerns. Although the Bureau of the Census has revised the U. S. totals for data on manufactures for years prior to 1939, these revised figures could not be used here because comparable data are not available for counties and states. The census includes plants reporting production valued at \$5,000 or more during the year of the census.

TABLE 2
WAGE EARNERS EMPLOYED IN MANUFACTURING,
1929-39

	NUMBER OF WAGE EARNS (IN THOUSANDS)			PERCENT CHANGE	
	1929	1933	1939	1933-39	1929-39
122 TV Counties....	127	98	139	41.8	9.5
7 TV States.....	863	693	920	32.8	6.5
United States.....	8,822	6,056	7,887	30.2	-10.6

Source: *Census of Manufactures*, 1929, 1933, and 1939. County totals include unpublished census data.

INCREASE OF EMPLOYMENT IN MANUFACTURING

The expansion in the number and variety of manufacturing plants was accompanied by an increase in the number of factory wage earners, but this change was of a considerably greater magnitude. The 2,069 plants in the Valley in 1939 employed 139,074 wage earners, 40,952 more than were employed in the 1,348 plants in 1933. This represents an increase of 42 percent during the six-year period. In comparison, the wage earners in the whole United States increased 30 percent. Among the geographic divisions, the rate of increase of wage earners in the Tennessee Valley was equalled only in the Pacific Coast

states.³ Moreover, the number of workers employed in Valley manufacturing plants in 1939 was 10 percent higher than in 1929, whereas in the nation as a whole factory employment was still 11 percent below the 1929 level.

The proportion of the population of the Valley employed in industry also increased. In 1933, 32 people out of every thousand in the Valley were wage earners in factories, but by 1939 this number had reached 44 per thousand. In the nation as a whole the increase was from 48 to 60 per thousand during the same period. However, there is a noticeable difference in the trends between 1929 and 1939. Throughout the country the ratio of factory employment declined after 1929, and it did not recover until after the outbreak of war. By way of contrast in 1939 the Valley had recovered to the 1929 level of 44 per thousand while the average for the nation dropped from 72 in 1929 to 60 per thousand in 1939.

Although the proportion of the total population employed in factories was increasing more rapidly both in the Valley and the southeastern States, this proportion was still only three-fourths of the ratio in the United States as a whole. To employ the same proportion of the population in factories in the Valley as in the United States as a whole would necessitate the establishment of factories that would employ over 50,000 additional wage earners. While industry has been developing rapidly in the Valley, the region is not yet highly industrialized.

There is some evidence that the expansion of manufacturing industries in the Tennessee Valley has given an outlet for population that in former years had to migrate from the Valley to other areas or remain on farms in the Valley and contribute to crowded conditions there. Even while continuing to reside on farms, the dependence of the labor force upon agricultural work for a living is apparently declining. Between 1930 and 1940 the decline of agricultural employment in the Valley was even more pronounced than in the nation as a whole. Concurrently with the decline in agricultural employment the increase of employment in manufacturing took place. The rate of increase of industrial employment in the Valley

³ In this and similar comparisons that follow the authors recognize that a like number of contiguous counties comprising a State or located outside the subregion dealt with here may have experienced equal or even greater changes as measured by the same criteria.

was about equal to the rate of decrease of industrial employment in the United States. However, manufacturing industries did not absorb all the laborers released from farms. It is estimated that three-fourths of the additional number of non-agricultural workers were employed in non-manufacturing industries. Consequently, the expansion in the proportion of workers in the latter category was twice the increment of expansion in manufacturing industries. This clearly indicates a transition to a more balanced regional economy.

These trends are reflected in the occupational distribution of employed persons in the Valley. In 1940 only 39 percent of the total employed were engaged in agriculture. Practically the same proportion, 37 percent, were engaged in trade and service occupations, while 19 percent were in manufacturing industries. The predominant proportion of the 180,808 persons employed in various capacities in manufacturing were in the textile industry. Textile and apparel factories together employed 40 percent of the total. Logging, sawmills, and planing mills employed 13 percent. Food and kindred products, the industry with 600 plants in the Valley, accounted for only 6 percent of the persons occupied in manufacturing. The light industries, such as, furniture, paper, printing, and leather employed 12 percent, while the heavy industries including minerals, chemicals, metals, and machinery employed 27 percent of all those engaged in manufacturing.

INCOME FROM INDUSTRIAL PAYROLLS

Income from factory payrolls increased even more rapidly than did total income in the Valley. While income payments from all sources were rising 44 percent in the 122 counties, wages paid to laborers working in manufacturing plants increased 57 percent (after allowances are made for changes in the value of the dollar). Wage workers in factories in 1933 were paid \$61 million. During the six years from 1933-39, the amount of factory wage payrolls increased almost \$51 million, to a total of \$112 million in the latter year. The rate of increase in the Valley was considerably above the rate of 47 percent for the United States as a whole. Among the several geographic divisions of the country only the highly industrialized East North Central States and the Pacific States progressed more rapidly in this respect than did the Valley.

As a result of this sharp increase in factory pay-

rolls, an increasingly larger proportion of the region's income was being derived from factory wages. In 1933 one out of each eight dollars of the Valley's income was estimated to be payment for factory labor. In 1939 one of every seven dollars came from this source. Between 1933-39 the estimated rate of increase of income from manufacturing industries was 60 percent greater than the increase from trade and service industries. The comparatively rapid rise in industrial wages contributed to the recovery of the region from the depression. In 1939 while real wages paid in manufacturing in the Valley were at a level 27

TABLE 3
WAGES PAID FACTORY WAGE EARNERS, 1929-39

	AMOUNT IN MILLIONS			PERCENT CHANGE (ADJ.)	
	1929	1933	1939	1933-39	1929-39
122 TV Counties...	\$108	\$61	\$112	56.8	27.0
7 TV States.....	737	419	714	44.6	18.8
United States.....	11,607	5,262	9,090	46.5	-4.0

Source: *Census of Manufactures*, 1929, 1933, and 1939. County totals include unpublished census data. In this and following tables (except retail trade) before rates of change 1933-39 were calculated the reported dollar figures were adjusted for a 15.2 percent decrease in the purchasing power of the dollar due to an increase of wholesale prices. Before calculating the change 1929-39 the data were adjusted for an increase of 22.5 percent in the value of the dollar due to a decline of prices.

percent above 1929, the comparable figure for the United States was still 4 percent below 1929.

TREND OF VALUE OF MANUFACTURED PRODUCTS

The value of the products manufactured is an over-all indication of the rate, extent, and type of industrialization. It reflects the cost of wages and salaries and the value of material, fuel, and power entering into production as well as the value added to products by fabrication. It is significant, therefore, that the total value of the products manufactured in the Tennessee Valley counties has grown decidedly faster than in the Southeast or in the nation as a whole. During the six years from 1933 to 1939 while production in the Valley was expanding 68 percent, the national increase was 54 percent.

As a result of the relatively more rapid increase of industrial production, Valley industries in 1939

produced a larger proportion of the national output than in 1933. Furthermore, the level of production in 1939 was above that of 1929 even after the effect of price changes are eliminated. Not only had the Valley counties recovered to the pre-depression level, but in 1939 they reported a total production one-third higher than 1929, while in the remainder of the country the volume was still below 1929. It was noted above that the number of wage earners has been increasing in the Valley. However, the value of production has been rising more rapidly than the labor force employed in Valley factories. The average wage earner in 1933 produced goods valued at \$3,172, but by 1939 this average had risen to \$4,438, an increase of \$1,266. The national average was \$5,178 in 1933 and \$7,208 in 1939. It may be pointed out, too, that the value of production is growing more rapidly than the population. In 1933 the average

reached its all-time high prior to the war. Not only had manufacturing industries in the Valley recovered from the depression of the early thirties, but by 1939 the value added to products by Valley factories exceeded the 1929 level by 44 percent, while the national average in 1939 remained below the 1929 level.

The trend of the value added by manufacture indicates that manufacturing industries are making an increasingly larger contribution to the total income in the Valley. This is reflected in the average value added per wage earner in factories. In 1933 each factory worker added an average of \$1,608 to the materials he fabricated. By 1939 this average had risen to \$2,133, an increase of one-third in six years. Another measure of the gross margin of manufacturing operations is the average returns for wages paid labor. For every \$100 paid in wages in 1939, Valley manufacturers

TABLE 4

VALUE OF MANUFACTURED PRODUCTS, 1929-39

	AMOUNT IN MILLIONS			PERCENT CHANGE (ADJ.)	
	1929	1933	1939	1933-39	1929-39
122 TV Counties.	\$564	\$311	\$617	68.0	34.0
7 TV States	4,747	2,754	4,948	52.4	27.7
United States	69,961	31,359	56,843	53.7	-0.4

Source: *Census of Manufactures*, 1929, 1933, and 1939. County totals include unpublished census data.

production per person was \$103 but in 1939 this had increased to \$194.

INCREASE OF VALUE ADDED TO PRODUCTS BY MANUFACTURE

The value added by manufacture represents the value of the finished products less the costs of raw materials and the costs of production. The data on value added by manufacture constitutes a composite measure of the gross margin of income for the operation of manufacturing enterprises in a given area. Between 1933-39 the value added by manufacture increased 60 percent in the Tennessee Valley, whereas it increased but 44 percent in the United States. This rate of increase was equalled only by one geographic division, the highly industrialized East North Central States.

By comparing the value added by manufacture in 1939 with that of 1929, it is possible to measure the changes that took place during the decade following the year in which the national income

TABLE 5

VALUE ADDED BY MANUFACTURE, 1929-39

	AMOUNT IN MILLIONS			PERCENT CHANGE (ADJ.)	
	1929	1933	1939	1933-39	1929-39
122 TV Counties.	\$253	\$158	\$297	59.6	43.6
7 TV States	2,283	1,140	2,037	51.6	9.3
United States	31,783	14,538	24,683	44.0	-4.8

Source: *Census of Manufactures*, 1929, 1933, and 1939. County totals include unpublished data.

received a return of \$264 in value added to products. After paying the \$100 for wages, a gross margin of \$164 remained from which to pay salaries, debts, taxes, replacements, dividends, etc. This gross margin was only slightly less than the national average of \$172 and represented an increase over the 1933 average of \$160 in the Valley. Meanwhile the national average declined from \$176 in 1933 to \$172 in 1939.

EXPANSION OF THE VOLUME OF TRADE

Both retail and wholesale trade increased more rapidly in the Valley counties between 1933 and 1939 than in the country as a whole. The volume of retail trade in 1933 amounted to \$272 million and rose to \$509 million in 1939. When adjusted for changes in retail prices, the increase during the six years amounted to 63 percent as compared to an increase of 47 percent in the United States. Retail sales averaged \$160 per capita in the Valley

in 1939 as compared to \$90 in 1933. This represented an increase of 55 percent in the flow of goods to consumers. The comparable rise in the United States was 41 percent. Among the geographic divisions only the Mountain States reported a higher gain than the Valley.

Retail trade in the Valley counties also made a relatively more rapid recovery from the depression after 1933. Although in the latter year the level of trade was below the average for the country and the population of the Valley was increasing more rapidly than the national population, retail sales in the region in 1939 averaged 4 percent above the 1929 level, whereas the national average was still below 1929. While the average sales in the

The growth in this field was equal to the expansion in other fields of commerce and industry. During the period 1933-39 when the nation's wholesale business was increasing 46 percent, the Valley counties reported an increase of 80 percent. This rate was greater than that reported for any of the geographic divisions. This expansion was not due merely to growth of population; the average wholesale trade per capita in the Valley rose from \$53 to \$106. That is to say, the ratio between trade and population in the Valley rose during the period, whereas in the northern States the ratio remained the same and in the Pacific States it declined. Neither was the expansion of trade in the Valley due to the shift of trade from

TABLE 6
NET RETAIL SALES, 1929-39

	NET SALES AMOUNT IN MILLIONS			PER CAPITA SALES			
	1929	1933	1939	Amount			Percent Change (Adj.)
				1929	1933	1939	
122 TV Counties.....	\$539	\$272	\$509	\$188	\$90	\$160	54.8 3.7
7 TV States.....	4,000	2,100	3,731	219	111	186	46.5 3.7
United States.....	48,330	25,037	42,042	398	199	321	41.0 -1.5

Source: *Census of Business*, 1929, 1933 and 1939. Data for 1929 were revised for comparison with 1939. Sales data were adjusted for changes in retail prices before rates of change were calculated. Per capita rates are based on estimated population July 1 of each year.

Valley were still only one-half of the average for the country in 1939, the relatively greater increase of trade in the Valley was tending to smooth out the regional difference and give to the Valley a greater proportion of the national total.

WHOLESALE DISTRIBUTION

The predominant proportion of the nation's wholesale distribution is centered in the large metropolitan cities. There are no such large cities in the Valley, and those in the adjacent territory, such as Nashville, Atlanta, Birmingham, Memphis, and Cincinnati, transact a large portion of the Valley's wholesale business. Because of this condition and the low income of the area, the Tennessee Valley counties reported in 1939 only one-fourth of the wholesale business that one would expect to find in the Valley population. However, this relationship is changing and firms in the Valley region have been assuming an increasingly important role in the field of wholesaling. In 1939 these firms reported a larger proportion of the nation's trade than in 1933.

TABLE 7
WHOLESALE TRADE, 1929-39

	NET SALES IN MILLIONS			PERCENT CHANGE (ADJ.)	
	1929	1933	1939	1933-39	1929-39
122 TV Counties.	\$345	\$161	\$342	79.8	21.4
7 TV States....	4,811	2,228	4,230	61.0	7.7
United States...	66,983	32,151	55,266	45.8	1.1

Source: *Census of Business*, 1929, 1933 and 1939. Totals for counties include estimates for data withheld by the census to avoid disclosure of individual enterprises.

other areas, for the whole of the seven Valley States reported a rise in business. It should be noted, however, that in 1939 the average sales per capita were only 25 percent of the national average of \$419.

BANK DEPOSITS

The development of industry and commerce has been accompanied by an increase of bank

deposits. Data are not available for the six-year period from 1933-39. However, some insight into the direction and magnitude of change can be had from data for the period from June 1935 to June 1941. During these six years total deposits in Valley banks rose from \$214 million to \$450 million, an increase of \$236 million. Deposits in Valley banks in 1935 averaged \$69 per capita. Between June 1935 and June 1941 (after taking account of changes in dollar values), they rose 82 percent in the Valley as compared to 52 percent in the United States. By 1943 Valley deposits averaged \$192, which represented an additional increase of 54 percent in two years as compared to a rise of 26 percent for the nation. However, in spite of this differential increase the average in the Valley in 1943 amounted to only 29 percent of

the United States. If the income of the Valley had grown at the national rate of increase, the aggregate income during the period would have been only \$4,199 million, or \$348 million less. In other words, this latter amount represents additional income in the Valley due to the higher regional rate of growth.⁵

A more exact measure of the welfare of the people is provided by the average income for each person. In the Valley the average was estimated to be \$148 in 1933. By 1939 per capita income rose to an estimated \$239, an increase of \$91 per person in six years. However, this amount does not reflect the actual gains in the standard of living since the amount of goods and services a dollar would buy declined 15 percent during the period, due to an 18 percent rise in wholesale

TABLE 8
TOTAL BANK DEPOSITS, 1935-43

	DEPOSITS IN MILLIONS			AVERAGE DEPOSITS PER CAPITA				
	June 1935	Dec. 1941	Dec. 1943	Amount			Percent Increase (Adj.)	
				1935	1941	1943	1935-41	1941-43
122 TV Counties.....	\$214	\$366	\$627	\$69	\$112	\$192	81.9	53.9
7 TV States.....	1,877	3,099	5,092	97	151	245	75.0	45.2
United States.....	44,625	63,513	89,580	351	477	669	52.3	25.7

Source and notes: Deposits for June 30, 1935: State data from *Statistical Abstract of the U. S.: 1936*; county data compiled from *Sales Management*, April 10, 1936. State and county data for December 31, 1941, and December 31, 1943, compiled from *Distribution of Bank Deposits by Counties* (U. S. Treasury Department, 1943, 1944). The rates of change are based on adjusted comparable data, all of which are not shown in table.

the national average. The nation's banking business, like its wholesale trade, is well concentrated in large metropolitan centers.

TREND OF INCOME OF VALLEY PEOPLE

Income payments provide an over-all measure of the net effect of recent economic changes in the Tennessee Valley. Income payments to individuals in the Valley increased rapidly between 1933 and 1939. Payments in 1933 were \$448 million and rose to \$760 million in 1939.⁴ The aggregate payments in the seven years totaled \$4,547 million. The amount of income in the Valley in 1939 represented an increase of 44 percent over 1933 in comparison to an increase of 29 percent in

prices. After correcting the averages for changes in the value of the dollar, there was a net gain of

⁵ A question arises here as to what effect the expenditures by the TVA have had on income in the Valley. During the years 1933-39 TVA expenditures amounted to \$206 million. This sum was equal to 4.5 percent of the aggregate income in the Valley during the period, but the expenditures were \$142 million less than the \$348 million additional income due to the higher regional rate of increase. However, this comparison is quite unrealistic, since a large percentage of TVA expenditures were for commodities manufactured outside the Valley, which expenditures contributed to income in other sections of the country. A more realistic appraisal of the extent to which the expenditures contributed to the welfare of people in the Valley can be made from the following data on TVA expenditures from 1933 to 1939:

⁴ For the intervening years the estimates are (in millions): 1934, \$551; 1935, \$604; 1936, \$717; 1937, \$760; and 1938, \$707.

\$79, or an increase of 37 percent in purchasing power over the 1933 income. None of the geographic divisions of the country had higher rates of growth.

During this same period, the average income in the nation rose 24 percent. In other words, the people of the Valley received a larger portion of the national income in 1939 than in 1933. This increase in average income per person took place while the population in the Tennessee Valley increased 5 percent, whereas the national increase in population was but 4 percent. The changes in the Valley may also be measured in terms of the recovery to the pre-depression level. By 1939 the average income in the Valley was 4 percent above the 1929 level, while in the country as a whole the average was still 3 percent below 1929.

In 1933 the per capita income in the Valley was 40 percent of the national average; by 1939 the proportion had increased to 44 percent. These figures provide the most conclusive evidence that while the average income in the nation has been rising, income in the Valley has been rising even

	Total Amount	Estimated Amount in 122 TV Counties
Total Salaries and Wages (000 omitted)	\$103,711	\$103,711
Space Rental Payments (000 omitted).....	1,233	1,233
Purchase of Materials (000 omitted).....	100,907	20,000
Total for above items (000 omitted)	\$205,851	\$124,944

The total of \$125 million estimated expenditures of TVA in the Valley was equal to only 2.7 percent of the estimated income during the same period. Moreover, increment to Valley income due to the higher regional rate of growth amounted to \$225 million more than this sum. Furthermore, only about one-fifth of the \$20 million spent for materials accrued to individuals as income payments, and only a portion of the \$1.2 million spent for rent represented net property income. Actually, then it may be estimated that the expenditures of TVA in the Valley contributed approximately \$109 million to the wages, salaries, proprietors' income, and property income in the Valley. This equals 2.4 percent of the total income during the period under consideration. The additional income due to the higher regional rate of growth was \$239 million over and above this amount.

The above facts completely ignore the question: What direct benefits were realized as a result of the expenditures listed?

more rapidly in spite of a more rapid increase of population. At the same time the average income in the Valley was still less than half of the national average. This indicates clearly the magnitude of the economic problem that confronted the people. It also indicates the magnitude of the developmental opportunities that existed in the region not

TABLE 9
ESTIMATED INCOME PAYMENTS, 1929-39

	ESTIMATED AMOUNT IN MILLIONS			AVERAGE PER CAPITA		
	1929	1933	1939	1929	1933	1939
122 TV Counties.....	\$805	\$448	\$760	\$281	\$148	\$239
7 TV States.....	6,127	3,639	5,797	337	193	292
United States.....	82,617	46,273	70,601	680	368	539

	PERCENT CHANGE OF AVERAGE (ADJUSTED)		RATIO OF AVER- AGE TO NATIONAL AVERAGE		
	1933-39	1929-39	1929	1933	1939
122 TV Counties.....	36.9	4.3	41	40	44
7 TV States.....	28.3	6.2	50	52	54
United States.....	24.1	-3.0	100	100	100

Source: Based on estimates for States of income payments to individuals prepared by U. S. Department of Commerce and published in *Survey of Current Business*, June 1943. Data for the group of counties were estimated on the basis of the proportion of the retail sales of the seven Tennessee Valley States as reported by the *Census of Business* for the group of Valley counties located in each State. Averages are based on estimated population as of July 1 of each year.

only in industry, but in agriculture, forestry and all fields of business enterprise.

SUMMARY OF INDUSTRIAL TRENDS IN THE TENNESSEE VALLEY

Although income and the degree of industrialization in the Tennessee Valley have not yet reached the national average, during the period 1933-39 the region made progress in that direction. New industrial plants were located in the Valley and Valley industries employed a larger proportion of the nation's factory workers. Industrial enterprises were becoming relatively more profitable, and the gains from processing and fabrication were increasing faster in the Valley than in the country as a whole. The higher rate of regional growth

TABLE 10
COMPARATIVE ECONOMIC STATUS OF THE TENNESSEE
VALLEY, 1939

	AVERAGE PER CAPITA RATES		PER CENT OF NA- TIONAL AVER- AGE
	United States	Tennes- see Valley	
Value of Manufactured Products.....	\$434	\$194	45
Retail Trade.....	321	160	50
Wholesale Trade.....	419	106	25
Bank Deposits (1941).....	477	112	24
Cash Farm Income per Capita			
Farm Population.....	258	94	36
Total Income Payments.....	539	239	44

farm yielded only \$94 in cash income from crops and livestock for each person on farms. Even though this was 49 percent above the 1933 average, it was still only about one-third of the national average. The value of the products manufactured averaged somewhat higher, but it was less than one-half the national average. While income payments had increased more rapidly than population and in 1939 Valley people received a larger share of the nation's income, the average in the region was still only 44 percent of the national average of \$539.

When the economic changes are appraised as a whole it becomes evident that the industrial trends in the subregion are in the same direction as trends in the Southeast and in the country as

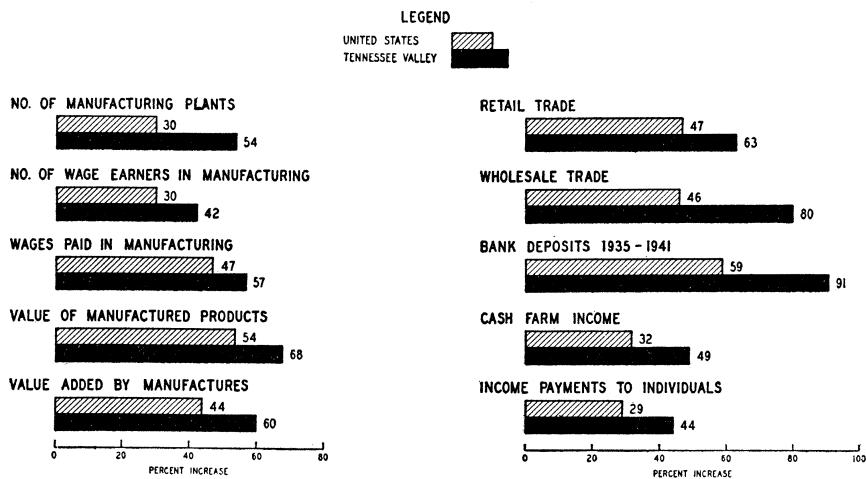


FIGURE 1. ECONOMIC PROGRESS IN THE TENNESSEE VALLEY, 1933-1939
Comparative Trends of Manufacturing, Trade, and Income

gave to the Valley in 1939 a volume of manufactured products valued at \$65 million more than it would have had if Valley manufactures had grown only at the national rate. The additional wholesale trade in 1939 due to the higher regional rate was \$79 million, and the additional income in that year amounted to \$94 million. (These estimates are adjusted for price changes.)

Even though industry has been developing at a comparatively rapid rate, the people of the Valley still have a long way to go to reach the average national economic status. In 1939 the region's wholesale trade per capita was only \$106 or 25 percent of the national average. The average

a whole. However, there are some notable differences. Industry developed more rapidly in the Southeast than in the nation and more rapidly in the Tennessee Valley than in the seven southeastern States. This immediately raises two questions, i. e., why do these differences exist and what do they mean?

It would be unrealistic to believe that the changes are due to any one condition, and this paper is not concerned with measuring the role played by the different factors. The industrial trend of the nation was upward and a similar trend in the Southeast could have been anticipated. The reasons for the upward national trend do not

lie within the scope of this paper. Whatever these forces were and whatever the extent to which each contributed to the national trend, they were at work in the Southeast as they were in other parts of the nation.

During the period studied the people of the Southeast and their local and State governments became increasingly active in their efforts to develop industry. Private citizens made their voices heard in public debate on the subject, and many businessmen became active in developing new industries. The job was difficult because the area had been largely dependent for income upon

are offered for employment or for engaging in new enterprises.

In the 122 counties comprising the Tennessee Valley, the rate of industrial growth has been even greater than the rate of growth in the seven-State area. Here the effect of aggressive action on the part of the State governments was no greater than in the portions of the seven States outside the Tennessee Valley. The principal difference seems to lie in the fuller development of the natural resources of the Valley counties. The Tennessee River and its tributaries were in 1933 the potential source of an unusually large amount

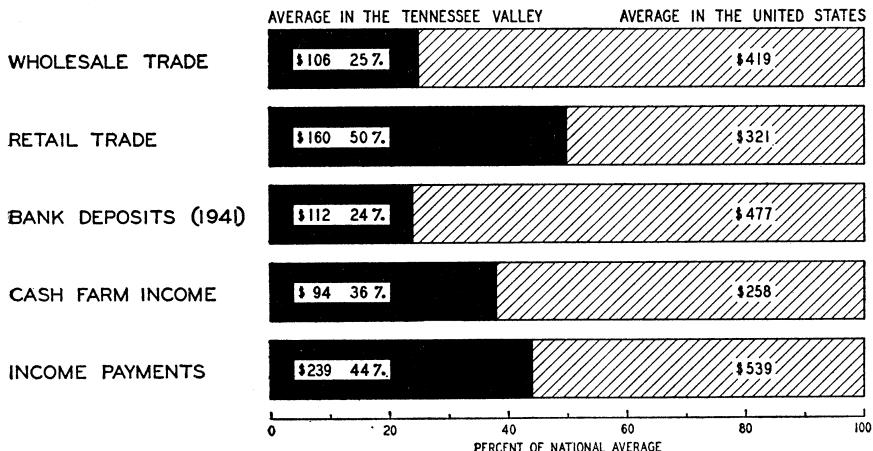


FIGURE 2. COMPARATIVE ECONOMIC STATUS IN THE UNITED STATES AND IN THE TENNESSEE VALLEY, 1939
Comparison of Average per Capita Rates in the United States and in the Tennessee Valley

the production of agricultural and forest products, which were shipped in large quantities to factories in other parts of the nation for final processing. That the people were able to do something about industrial development is evidence that competitive forces can bring about a change when enough people consider such a change desirable.

However, these changes could not have been brought about nor can the trends continue without conditions favorable to the development of industry in the region. An abundant reserve of natural resources is probably the most important condition favorable for building new industries. The region has another advantage in the relatively large population which represents a potential demand for goods and services when opportunities

of hydroelectric power. The river was also a potential part of the inland waterway system. The soil of the region was a potential source of a wide variety of agricultural and forest products. During the six years following 1933 these natural resources were developed as a part of the program of the Tennessee Valley Authority and cooperating agencies. Dams were built, provisions were made for river navigation, and a method was developed for manufacturing and for effectively utilizing fertilizers from readily available raw materials.

There can be little doubt that the development of these resources made a substantial contribution to the improved economic status of the people of the Valley during the period. However, the

contribution of the people of the Valley in bringing about these changes is of much more importance. It was the people who finally converted the resources into finished goods and services that

made the improved economic status possible, and it is the people of the Valley who have the major responsibility for bringing about improvement in economic conditions in the future.